Amendments to the Specification:

Please replace the paragraph on page 3, lines 12–21, with the following amended paragraph:

The use in cell culture of ~~Cytodex™~~ CYTODEX™ Microcarrier support particles (Amersham Pharmacia Biotech) has improved the yields of anchorage dependant cells by increasing the surface area for growth. Properties of these microcarriers include optimised size and density for maximum cell growth, a biologically inert matrix that provides a strong but non-rigid substrate for stirred cultures and transparency for easy microscopic examination of attached cells. Microcarriers can be used in either suspension cultures or monolayer cultures to increase the surface area of the culture vessels and perfusion chambers. The increased surface area allows enables the production of increased densities of cells, viruses and cell products.

Please replace the paragraphs on page 5, lines 4–16, with the following amended paragraphs:

Figure 1 is a plot showing uptake of [^{35}S]methionine into CHO cells grown on ~~Cytodex~~ CYTODEX™/YOx Microcarrier ~~microcarrier~~ beads in the presence and absence of the uptake inhibitor cycloheximide according to Example 2.

Figure 2 is a plot showing uptake of [^{14}C]methionine into CHO cells grown on ~~Cytodex~~ CYTODEX™/YOx Microcarrier ~~microcarrier~~ beads according to Example 2.

Figure 3 is a plot showing uptake of [^{3}H]methionine into CHO cells grown on ~~Cytodex~~ CYTODEX™/YOx Microcarrier ~~microcarrier~~ beads in the presence and absence of cycloheximide according to Example 2.

Figure 4 is a plot showing the incorporation of [^{35}S]methionine into CHO cells and HeLa cells grown on ~~Cytodex~~ CYTODEX™/YOx Microcarriers in the presence and absence of cycloheximide according to Example 3.

Please replace the paragraph on page 9, lines 11–21, with the following amended paragraph:

Suitably, the support particles employed in the present invention can be composed of any material compatible with the growth of adherent cells, the support particles containing a scintillant substance which has been coated onto, or integrated into, the matrix of the particles. In a preferred embodiment, the support particles comprise polymeric beads, preferably having a porous or macro-porous structure. Suitable polymeric materials include polystyrene, polyvinyltoluene, polyacrylamide, agarose, polycarbonate or dextran polymers. Particularly preferred supports for use in the method are ~~Cytodex~~ CYTODEX™ Microcarrier ~~microcarrier~~ supports which are sold under the

Trade Mark, ~~Cytodex~~™CYTODEX (Amersham Pharmacia Biotech) and consist of a biologically inert cross-linked dextran matrix.

Please replace the paragraph on page 10, line 31, through page 11, line 17, with the following amended paragraph:

The support particles employed in the present invention must be treated or surface modified to allow cell adherence and cell growth. Various types of support surface treatment may be used, including both physical and chemical treatments. A preferred method for treatment of plastic beads involves the use of high voltage plasma discharge (either vacuum discharge or atmospheric discharge) which is a well-established method for creating a negatively charged hydrophilic surface that allows cell spreading and adherence. Cell adherence and growth can be further enhanced by applying additional coatings to the support surface, including: (i) positively or negatively charged chemical coatings such as polylysine, or other biopolymers, (ii) components of the extracellular matrix, including collagen, laminin, fibronectin, and (iii) naturally secreted extracellular matrix laid down by cells cultured on the plastic surface. In the preferred supports for use in the invention, different types of coated and derivatised ~~Cytodex~~ CYTODEX™ Microcarrier ~~microcarrier~~ supports are available, such as that formed by substituting the dextran matrix with DEAE (N,N-diethylaminoethyl) groups distributed throughout the matrix, or by substituting the matrix with a surface layer of positively-charged THAMP (N,N,N-trimethyl-2-hydroxyaminopropyl) groups (~~Cytodex~~ CYTODEX™ ~~Surface~~

Microcarriers, Technical Data File; Microcarrier Cell Culture, Principles and Methods, Amersham Pharmacia Biotech).

Please replace the paragraph on page 11, lines 19–22, with the following amended paragraph:

For integrating scintillant material (such as yttrium oxide or yttrium silicate) into the matrix of ~~Cytodex~~ CYTODEX™ Microcarrier support particles, the method typically includes forming an emulsion of a mixture of dextran and the yttrium compound in an aqueous solution, followed by cross-linking.

Please replace the sub-heading on page 13, at line 10, with the following amended sub-heading:

1. Preparation of Yttrium Oxide (YOx) Loaded ~~Cytodex~~ CYTODEX™ Microcarrier Beads

Please replace the sub-heading on page 13, at line 24, with the following amended sub-heading:

iii) Preparation of Dextran-YOx Beads (~~Sephadex~~ SEPHADEX™ Gel Filtration Media)

Please replace the sub-heading on page 13, at line 32, with the following amended sub-heading:

iv) Preparation of ~~Cytodex~~ CYTODEX™-YOx Microcarriers (DEAE-~~Sephadex~~ SEPHADEX™ Gel Filtration Media)

Please replace the paragraph on page 14, lines 1–10, with the following amended paragraph:

In a 100ml 3-necked reaction vessel was added in order with stirring: 50% NaOH (2.1ml), water (9.3ml), $NaBH_4$ (0.05g), toluene (30ml) and dried dextran beads (5g). To this was added a 65% solution of diethylaminoethyl chloride hydrochloride (4.5ml) and the reaction mixture heated at 60°C for 4hours. The beads were neutralised with dilute HCl and washed with 0.9% NaCl. The following batches were prepared by the above method:

~~Cytodex~~ CYTODEX™/YOx Microcarriers prepared at 3g YOx/50ml dextran;

~~Cytodex~~ CYTODEX™/YOx Microcarriers prepared at 5g YOx/50ml dextran;

~~Cytodex~~ CYTODEX™/YOx Microcarriers prepared at 7.5g YOx/50ml dextran.

Please replace the sub-heading on page 14, at line 12, with the following amended sub-heading:

2. Uptake of Radiolabelled Methionine into CHO cells Cultured on ~~Cytodex~~ CYTODEX™/YOx Microcarriers

Please replace the paragraph on page 14, lines 17–32, with the following amended paragraph:

~~Cytodex~~ CYTODEX™ and ~~Cytodex~~ CYTODEX™/YOx Microcarrier ~~microcarrier~~ beads were dispensed into sterile universal containers. Beads were collected by centrifugation at 100rpm for one minute. Supernatants were removed and replaced with complete Ham's F12 nutrient mix containing 10% (v\v) FCS. Beads were incubated with rolling at 37^{O}C for 30 minutes. Beads were harvested by centrifugation at 100rpm for 1minute. Spent medium was removed and replaced with 10^{7}cells in 500µl or less. Beads plus cells were incubated at 37^{O}C for 20 minutes to permit cell attachment to beads. Fresh Ham's F12 medium was added to a final volume of 4ml containing 5mg/ml beads for [^{35}S] and 10mg/ml for [^{14}C] or [^{3}H]. Beads were left to roll overnight at 37^{O}C. Following overnight incubation, beads/cells were harvested by centrifugation at 100rpm for 1 minute. Supernatant containing unattached cells was removed. Microcarrier beads were washed with PBS (x1) and resuspended in methionine deficient DMEM supplemented with radiolabelled methionine. Cultures were returned to 37^{O}C with rolling. [^{3}H]Methionine and [^{14}C] or [^{35}S] methionine were included at final concentrations of 8µCi/ml and 4µCi/ml respectively.

Please replace the paragraph on page 15, lines 14–19, with the following amended paragraph:

The results are shown in Figures 1, 2 and 3 which demonstrate the incorporation of radiolabelled methionines ([^{35}S], [^{14}C] and [^{3}H]) into CHO cells grown on ~~Cytodex~~ CYTODEX™/YOx Microcarrier ~~microcarrier~~ beads. Increases in signal are observed with increasing loading of YOx scintillant. Figure 1 moreover, illustrates that the uptake of [^{35}S] methionine into CHO cells is inhibited in the presence of protein synthesis inhibitor, cycloheximide.

Please replace the sub-heading on page 15, at line 21, with the following amended sub-heading:

3. Parallel Assays of the Incorporation of [^{35}S]methionine into CHO cells and HeLa Cells Cultured on ~~Cytodex~~ CYTODEX™/YOx Microcarriers

Please replace the paragraph on page 15, lines 26–32, with the following amended paragraph:

40mg of YOx-loaded ~~Cytodex~~ CYTODEX™ Microcarrier ~~microcarrier~~ beads were dispensed into suitable sterile containers and allowed to settle. The supernatant was removed from each microcarrier pellet and the beads resuspended in 5ml of either complete Ham's F12 nutrient mix (Sigma N-4888) or DMEM (Sigma D-6546), both

containing 10%FCS, 2mM L-glutamine and 50μg/ml streptamycin/50IU/ml penicillin.

The microcarriers were incubated at 37^{O}C for thirty minutes without rolling.